ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Animal Abstract **Element Code:** ARACF13010
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CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Sauromalus ater* Duméril
COMMON NAME: Common Chuckwalla
SYNONYMS: *Sauromalus obesus* Baird
FAMILY: Iguanidae

AUTHOR, PLACE OF PUBLICATION: Duméril 1856.

TYPE LOCALITY: Unknown

TYPE SPECIMEN: Unknown

TAXONOMIC UNIQUENESS: According to NatureServe (2008), "Hollingsworth (1998) examined variation in *Sauromalus* and concluded that five species should be recognized. He regarded *S. obesus* as conspecific with *S. ater*, and he used *S. ater*, which has priority, as the specific name of the combined taxon. No subspecies of *S. ater* were recognized. Based primarily on the extensive use of the name *S. obesus*, a petition to give that name precedence over that of *S. ater* was submitted to the ICZN. However, McDiarmid et al. (2002) questioned this reasoning and argued that the priority of *S. ater* should be maintained. In 2004, ICZN ruled that the name *Sauromalus ater* Duméril 1856 has precedence over the name *Sauromalus obesus* (Baird 1858) (Bulletin of Zoological Nomenclature 61:74-75). Hence, *Sauromalus obesus* is no longer the correct name for the chuckwallas of the United States (or Mexico)." Some sources still reflect the old name *S. obesus* including Collins (1994-2008), and Stebbins (2003).

The species *ater* is 1 of 5 species in the genus *Sauromalus*; *S. ater* is the only species in North America. Three populations of *ater* are followed in Arizona, including the Arizona (southern part of state - south of Gila and Salt rivers), Glen Canyon (Glen Canyon Dam to Utah border) and Western populations (from Glen Canyon Dam southwest along Colorado River; western and southwestern part of state).

DESCRIPTION: The species is a large, dorso-ventrally flattened, dark-bodied lizard with loose folds of skin on the neck and sides. The dorsum has small granular scales and the tail has a blunt tip and a broad base. The rostral scale is absent. The young are cross-banded with brown and gray-brown on body and tail. As reported by Kwiatkowski and Sullivan (2002a), adult males have 2 color patterns, those found on South Mountain are bicolored with a Black head, body, and limbs, and a reddish orange tail. Those in south-central Arizona (south of the Salt and Gila Rivers) are also bicolored; however, the tail is yellow to yellowish white. The

remaining populations are tricolor with a black head and limbs, a yellowish white tail, and orange saddles on the torso. These include those populations north of the Salt and Gila Rivers. Throughout their range, females are a mottled brown or gray and cryptic. The females (and also males in southwestern Utah) tend to retain juvenile cross bands. The species is the largest native iguanid in the U.S. The adult length is 11-16.5 in (28-42 cm).

AIDS TO IDENTIFICATION: The species differs from other U.S. iguanid lizards in being larger and more robust, lacking extended toe tips, lacking head spines and enlarged middorsal scales, and having no overlapping scales at the upper edge of the orbit.

The "Arizona" population differs from other populations in having fewer than 50 scales encircling the middle of the forearm. In addition, adult males are suffused with a more or less brilliant reddish tinge on both dorsal and ventral surfaces.

In the "Glen Canyon" population, most individuals have a secondary row of femoral pores. There are more than 50 scales around mid-foreleg. Both sexes usually have dark and light cross bands on body. There are 5-6 dark tail bands alternating with 4-5 light bands and the end of the tail is usually dark. The young are often brick red speckled with cream and with light and dark bands across their back.

ILLUSTRATIONS: Color drawing (Stebbins 1985: Plate 20)
Color drawings (Stebbins 2003: Pl. 25)
Color photo (Stebbins 2003: P. 269)
Color photo (Behler and King 1979: plate 331)
Color photo (Tashjian *in* http://elib.cs.berkeley.edu/cgi/img_query?enlarge=0091+3183+0918+0037
Color photo (Feldner *in* http://www.brennanart.com/h-s-o-tumidus.html)
Color photo (Feldner *in* http://www.brennanart.com/h-s-o-multi.html)
Color photo (Brennan in http://www.brennanart.com/h-s-o-multi.html)
Color photo (State of Utah *in* http://www.utahcdc.usa.edu/rsgis2/Search/display.asp?FINm=saurobes)
Color photo (Wilson *in* http://www.arts.arizona.edu/herp/lizard18.html)
Color photo (Enderson *in* http://www.arts.arizona.edu/herp/lizard18.html)
Color photo (Bell *in* http://www.arts.arizona.edu/herp/lizard18.html)
Color photo (Kenney *in* http://www.enature.com/fieldguide/showSpeciesRECNUM.asp?RECNUM=AR0073)

TOTAL RANGE: Southern Nevada and Utah, south through western Arizona and eastern California, and along the coasts of the Gulf of California in Sonora and Baja.

RANGE WITHIN ARIZONA: Western half of the state. The HDMS is currently following three populations: the Glen Canyon chuckwalla population is found near the Colorado River from Glen Canyon dam at Page, Arizona, to the state boundary with Utah; the Western population is found from the Glen Canyon Dam south along the Colorado River to the southwestern part of the state. In interior part of State, it is found north of the Gila and

Salt Rivers; the Arizona population is found south of the Gila and Salt Rivers to include the Gila, Maricopa, Santan, and South mountains, and the Tule Desert.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: They bask on rocks during the day. They are inactive in cold temperatures or extreme heat. Chuckwallas in Arizona make their homes in rock crevices. A frightened chuckwalla will retreat into a rocky crevice and wedge itself in sideways by inflating its body. The following is from Prieto and Ryan (1978), "in a challenge display a male chuckwalla compresses his trunk, partially extends his dewlap, orients laterally toward his opponent and performs rapid head nods with partial flexion of his front legs. The head nodding follows a specific sequence: 2 complete up and down movements, two intermediate nods and 2 shorter nods."

"Simple paper chromatography showed that the reddish orange and yellowish white color patterns in male chuckwallas are composed of carotenoid (which must be ingested) and pteridine (synthesized de novo) pigments (Kwiatkowski 2001). Carotenoids have long been known to act as an indicator signal of male or territory quality. Pteridines may also function as indicator pigments…" (Kwiatkowski and Sullivan 2002a). Grooming between chuckwallas and the licking of fecal pellets was commonly observed in the laboratory. Chuckwallas often lick other lizards as well as inanimate objects.

Male chuckwallas establish territories, where females and juveniles are tolerated, but other adult males are not. In a study conducted by Kwiatkowski and Sullivan (2002a), they found that despite wide variation in density among three chuckwalla populations in the Sonoran Desert (Phoenix Mts., Santan Mts., South Mountain), males in all populations exhibited strict territoriality. In addition, as population density increased, male territory size decreased and varied by as much as a factor of 10; extremely small territories were observed in the high density population (South Mountain). Population density did not appear to influence polygyny levels since the mean number of females per male territory did not differ among the three populations.

Consequently, male territory size appears influenced by tradeoffs that maximize the number of females in the territory and minimize territory defense costs associated with population density. As for female chuckwallas, they likely remain around patches of refugia (i.e. rock crevices) and food resources regardless of whether females are solitary or in groups. Plant availability apparently influences female chuckwalla home range size. In areas of richer resource clumps, females had smaller home ranges.

REPRODUCTION: Mating occurs from May to June. Chuckwalla laid one clutch of 5-16 eggs from June to August; the eggs are laid underground. The clutch size increases with the female body size. Females may only lay eggs every second year.

FOOD HABITS: Primarily herbivorous, chuckwalla browses on leaves, buds, flowers, and fruit. They eat a variety of annuals, some perennials, and occasionally insects. Based on a recent study (Kwiatkowski and Sullivan 2002b) in the Phoenix, Arizona area (Phoenix, Santan, and South mountains), chuckwallas were observed feeding on eight perennial plant species, all of which exhibited a relatively patchy distribution. Plants in this study included *Cercidium microphyllum*, *Sphaeralcea ambigua*, *Trixis californica*/*Viguiera deltoidea*, *Fouquieria splendens*, *Hyptis emoryi*, and *Lycium* sp. According to the researchers, no feedings were observed of the most abundant plant species that were found throughout the study sites (i.e., *Ambrosia deltoidea* and *Encelia farinosa*), suggesting that chuckwallas are selective about what they consume.

HABITAT: Predominantly found near cliffs, boulders or rocky slopes, where they use rocks as basking sites and rock crevices for shelter. They can be found in rocky desert, lava flows, hillsides and outcrops. Creosote bush occurs throughout most of its range.

ELEVATION: Sea level to 6,000 ft. (1,830 m). For the "Arizona" population, elevation ranges from 1,040-2,410 ft (317-735 m), based on unpublished record in the HDMS (AGFD, accessed 2003).

PLANT COMMUNITY: *Larrea tridentata* (Creosote bush) occurs throughout most of range. Based on feeding observations in the Phoenix area (Kwiatkowski and Sullivan 2002b), eight perennial plant species were consumed, all of which exhibited a relatively patchy distribution. These included: *Cercidium microphyllum* (=*Parkinsonia microphylla*, little-leaf paloverde), *Fouquieria splendens* (Ocotillo), *Hyptis emoryi* (desert lavender), *Lycium* sp. (desert-thorn), *Sphaeralcea ambigua* (desert globemallow), *Trixis californica* (American trixis), and *Viguiera deltoidea* (= *V. parishii*, Parish's goldeneye). In addition, no feedings were observed of the most abundant plant species that were found throughout the study sites, which included *Ambrosia deltoidea* (triangle bursage), and *Encelia farinosa* (white brittlebush).

POPULATION TRENDS: Unknown. Populations decreasing due to pet trade demand.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None (USDI, FWS 1996)
[C2 USDI, FWS 1994]
[C2 USDI, FWS 1991]

STATE STATUS: None

OTHER STATUS: Bureau of Land Management Sensitive under *S. obesus* (USDI, BLM 2000, 2005)
Forest Service Sensitive – Glen Canyon population (USDA, FS Region 3 1999)
Group 4 – Glen Canyon Pop. (NNDFW, NESL 2005)

[Group 4 (NNDFW, NESL 2000)]
Full species Determined Threatened
(Secretaría de Medio ambiente 2000)

MANAGEMENT FACTORS: According to NatureServe (2001), the greatest threats to the species are excessive collecting and habitat destruction. Physical damage to habitat has become common and widespread in Arizona. This habitat degradation is believed to be associated with reptile collecting for the commercial trade, resulting in the removal of individuals from the population and microhabitat destruction caused by unscrupulous collectors, who may use tools to move or break rocks and exfoliations to expose reptiles (New Mexico Department of Game and Fish, 1997).

The "Arizona" population on South Mountain, near Phoenix Arizona is easily accessible and due to a unique color pattern is highly desired by the pet trade. Exploitation of the population on South Mountain and destruction of its habitat are on the rise (Gergus et al. 1998; NatureServe 2001). There is a moderate threat to the "Glen Canyon" population in northern Arizona due to collecting. Also, historical populations of this chuckwalla in the Glen Canyon area of Utah have been reduced or eliminated by the damming of the Colorado River.

PROTECTIVE MEASURES TAKEN:

SUGGESTED PROJECTS: Statewide genetic studies to resolve the taxonomy of this iguanid lizard are needed.

LAND MANAGEMENT/OWNERSHIP: Various. Based on the "Arizona" population, ownership includes among others: BLM – Phoenix Field Office; DOD – Barry M. Goldwater Airforce Range; FWS – Cabeza Prieta National Wildlife Refuge; Phoenix South Mountain Park; Private.

SOURCES OF FURTHER INFORMATION

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ADDITIONAL INFORMATION:

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